# Baseline Oral Health Indicators

### **Prepared For:**

The Rhode Island State Action for Oral Health Access Project

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#### Acknowledgements

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#### **Background**

Rhode Island was one of six states to receive a State Action for Oral Health Access grant award from the Robert Wood Johnson Foundation. The goals of this project are to: (1) restructure the Medicaid dental benefit to improve access to dental care with an emphasis on preventive and primary dental care, (2) increase the capacity of dental "safety net" providers in the state and expand Providence Smiles, the successful school-based prevention program, to additional school districts, and (3) increase the supply of pediatric dentists, dental hygienists and dental assistants in the state. The Rhode Island Department of Human Services' partners in implementing this grant are the Rhode Island Kids Count and the Rhode Island Foundation.

As part of the contribution to the Oral Health Access Project, the Center for Child and Family Health, Rhode Island Department of Human Services, contracted with MCH Evaluation, Inc. to develop an Oral Health Module for the Rhode Island Medicaid Health Indicator System. The purpose of the work is to provide measures for the design, monitoring and evaluation of oral health initiatives implemented for Rhode Island children on RIte Care/Medicaid. Oral Health Indicators will be used to create baseline measures of unmet need as well as trend oral health outcomes for RIte Care/Medicaid children.

Potential Oral Health Indicators were selected by review of the research and policy literature. See *Selection of Oral Health Indicators for Rhode Island Oral Health Access Project*, J. Griffin and K. Singer, MCH Evaluation, Inc., 3/2004. These indicators were reviewed by Jill Beckwith (Baroni), Policy Analyst, Rhode Island KIDS COUNT; Martha Dellapenna, Dental Program Coordinator, ACS; Tricia Leddy, Administrator, Center for Child and Family Health, Rhode Island Department of Human Services; and Lanny Morrison, Consultant, Nemeth Morrison Corporation. The list of indicators was presented for review to the members of the Evaluation Studies Workgroup on November 18, 2004 and the first draft of the report was presented for review to the Evaluation Studies Workgroup and to Jill Beckwith, Rhode Island KIDS COUNT, in February of 2005.

The following two matrices present the chosen process and outcome indicators, their data sources, time referents and age detail. It should be noted that though some topics are covered in more than one data source, the indicators are not strictly comparable from one

data source to another. When possible, we present national comparison data. The presentation of each of the indicators includes notes on their data source, definition, time referent, and collection instruments. Also, it should be noted that with respect to the MMIS data, Medicaid enrollees might have received dental services not paid by Medicaid. We do not have data to document the receipt of these services.

# Oral Health Module for the Rhode Island Medicaid Data Archive Baseline Indicators: Process Measures

INDICATORS	DATA SOURCE <sup>1</sup>	DETAILS

# PROCESS MEASURES - Yearly - Number and Percent/Rate of Populations by Age (Detail by Insurance Status presented for RIHIS data)

		YEARS	AGES
Dental Visits by Type of Visit: Number per Year / Percent of Population with Visits (HCPCS Codes for MMIS Data			
<b>Dental Visits:</b>			
Preventive	Dental and Preventive Visits: RIHIS	1990, 1996 + 2001	1-18
Restorative	Dental Visits by Type of Visit: MMIS	2002 + 2003	1-18
Provision of Preventive Care Services (HCPCS Codes for MMIS Data)			
Sealants	RIHIS	2001	6-14/6-18
	MMIS	2002 + 2003	6-14 <sup>a</sup> /6-18
Barriers to Obtaining Dental Care (Cost, Transportation, Too Busy, Don't have a Dentist, Fear)			
Self-Report of Barriers to Care	RIHIS	2001	1-18

<sup>&</sup>lt;sup>a.</sup> Benefit covered for age group 6-14.

# Oral Health Module for the Rhode Island Medicaid Data Archive Baseline Indicators: Outcome Measures

INDICATORS	DATA SOURCE <sup>1</sup>	DETAILS	
OUTCOME MEASURES - Year	y - Number and Percent/Rate of Popula	ations by Age	
(Detail by Insura	nce Status presented for RIHIS data)	• 0	
``		YEARS	AGES
<b>Unmet Need for Dental Services</b> <sup>a</sup>			
Self-Report of Need for Dental Services	Children w/ Disabilities Survey	1998	0-18
Self-Report of Problems with Dental Services	RIte Care Family Survey	2003	0-18
-	Foster Children Survey	2004	3-18
<b>Dental Problems and Dental Service Utilization</b>	(HCPCS Codes for MMIS Data)		
Teeth Filled	RIHIS	2001	1-18
	MMIS	2002 + 2003	1-18
Tooth Loss/Extractions	RIHIS	1996 + 2001	1-5
	MMIS	2002 + 2003	1-5/1-18
Hospital and ED Use for Dental Disease/Problems (ICD-9 Codes for MMIS/HDD Data)			
Dental ED Visits (Total + Avoidable)	MMIS ED Visits	2001 + 2002	0-18
	RC ED Visits	2001 + 2002	0-18
Dental Hospital Admissions (Total + Avoidable)	MMIS Hospital Admissions	2001 + 2002	0-18
	RC Hospital Admissions	2001 + 2002	0-18
<b>Avoidable Dental Hospitalizations</b>	HDD	1993 - 2002	0-18

a. Unmet Need for Dental Care can also be estimated indirectly, i.e., % without a dental visit, % with an avoidable dental hospitalization or emergency department visit.

#### Footnotes:

1. There are six data sources presented. These include:

MMIS <sup>1</sup>	Medicaid Management Information System: Hospital and Emergency Department claims (for Fee-For-Service Medicaid Enrollees) and Dental Claims (for Fee-For-Service Medicaid and RIte Care Enrollees)
$RC^1$	RIte Care Encounter Data: Hospital and Emergency Department Claims (RIte Care Enrollees)
MCH Surveys	Children with Disabilities Survey, RIte Care Family Survey and Foster Children Survey
DOH RIHIS <sup>2</sup>	Rhode Island Health Interview Survey (Representative Sample of Rhode Island Residents)
DOH HDD <sup>3</sup>	Hospital Discharge Dataset: Ambulatory Care Sensitive Conditions Only (A subset of all Rhode Island Acute Care Hospitalizations)

NHIS National Health Interview Survey (Representative Sample of US Residents)

<sup>&</sup>lt;sup>1.</sup> The MMIS and RC Encounter populations shift through time. For example, in 2001, foster kids, previously FFS, were moved into RIte Care.

<sup>&</sup>lt;sup>2.</sup> The RIHIS collects data on baby bottle use and bottle use during sleep. It doesn't document early childhood caries. The RIHIS also collects data on dental insurance coverage and oral cancer screenings by dentists.

<sup>&</sup>lt;sup>3.</sup> Ambulatory Care Sensitive (ACS) Conditions are conditions for which timely and effective primary care will reduce the risk of hospitalization by: (1) preventing the start of the illness (an avoidable condition), (2) controlling an acute episodic illness or condition (an acute condition), and (3) managing a chronic disease or condition (a chronic condition). All ACS hospitalizations with dental diagnoses are judged avoidable, see Appendix C.

#### Information from Surveys Conducted by the Rhode Island Medicaid Research and Evaluation Project

#### **Dental Care Need and Unmet Need**

In three Rhode Island based surveys -- the Children with Disabilities Survey, the RIte Care Family Survey and the Foster Children Survey, both the need for dental services and unmet need for dental services were measured.

- Among Children with Disabilities on fee-for-service Medicaid in 1998, dental care ranked 6<sup>th</sup> out of 28 as the most unmet health care service need.
- Among Children on RIte Care who had intermitent health coverage in 2003, dental care ranked 1<sup>st</sup> out of 8 as the most unmet health care service need.
- Among Children on RIte Care who had continuous health coverage in 2003, dental care ranked 1<sup>st</sup> out of 8 as the most unmet health care service need.
- Among Foster Children on RIte Care in 2004, dental care ranked 1<sup>st</sup> out of 5 as the most unmet health care service need.

**Figures 1 and 2** indicate the percent of children in the surveys whose parents reported they needed dental care and, for those children with dental care need, the percent of children whose parents reported they were not able to obtain or had problems obtaining dental care for their children. Extrapolating these percentages to the total populations, we find that:

- Of the approximate 12,000 children under age 19 with disabilities on **fee-for-service Medicaid** in 1998, 11,364 (94.7%) were reported by their parents to have needed dental care.
- Of these 11,364 children, parents reported that for 3,273 (28.8%) of these children dental care was either not available or did not meet the child's need.

- Of the approximate 38,199 children under age 19 with **intermittent RIte Care coverage** in 2003, 27,007 (70.7%) were reported by their parents to have either needed or received dental care.
- Of these 27,007 children, parents reported that 10,155 (37.6%) of these children were not able to obtain dental care.
- Of the approximate 58,752 children under age 19 with **continuous RIte Care coverage** in 2003, 46,062 (78.4%) were reported by their parents to have either needed or received dental care.
- Of these 46,062 children, parents reported that 12,529 (27.2%) of these children were not able to obtain dental care.
- Of the approximate 889 children ages 3 and over who were living in licensed foster homes and who had RIte Care coverage in 2004, 714 (80.3%) were reported by their foster parents to have needed dental care.
- Of these 714 foster children, parents reported that 239 (33.5%) of these children had problems obtaining dental care.

#### **Survey Questions**

#### Children with Disabilities Survey, 1998, Ages 0-18, n=257:

"In the past 12 months, please tell me if p needs or requires dental care?" (For those needing dental care in the past year) "Is dental care available and does it meet p's needs?"

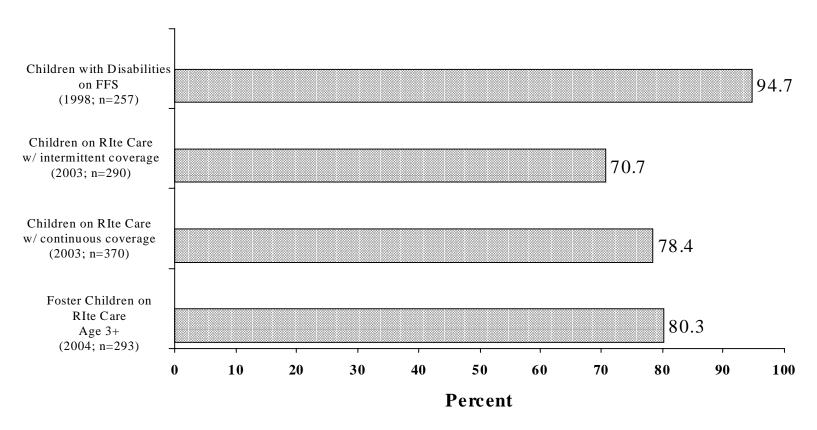
#### RIte Care Family Survey, 2003, Ages 0-18, n=660:

"In the past year, did p need or receive dental care?"
(For those needing dental care in the past year) "Was p able to get dental care?"

#### Foster Children Survey, 2004, Ages 3 – 18, n=293:

"Since you've had Neighborhood / NHPRI / RIte Care, has p needed dental services?" (For those needing dental care in the past year) "Did you have any problems getting dental services?"

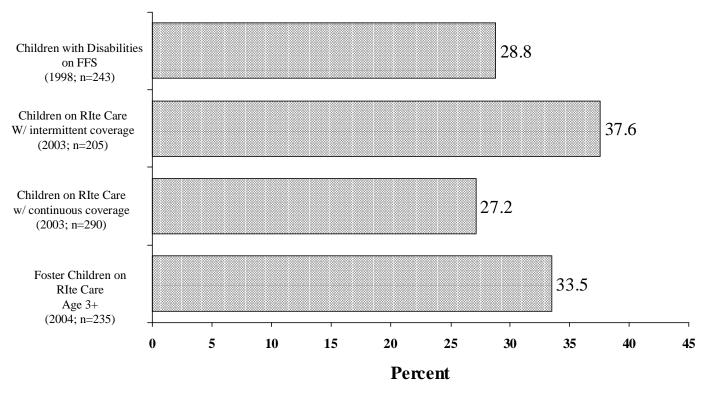
Figure 1: Percent of RI Children\* on RIte Care/Medicaid Who Needed Dental Services in the Past Year



<sup>\*</sup> As reported by their parents/foster parents

Data Source: Surveys Conducted by Rhode Island Medicaid Research and Evaluation Project

Figure 2: Of Those RI Children\* on RIte Care/Medicaid Who Were Reported to Need Dental Services in the Past Year,
Percent of Children with Unmet Need for Dental Services



<sup>\*</sup> As reported by their parents/foster parents

Data Source: Surveys Conducted by Rhode Island Medicaid Research and Evaluation Project

### Information from the National Health Interview Survey 2003

#### **Dental Visits**

#### As **Figure 3** shows:

- The 2003 National Health Interview Survey reported that 75% of all U.S. children ages 2 17 had a dental visit in the past year. This is an increase from 73% in 2001.
- For children ages 2 17 in the Northeast, 81.7% had a dental visit in the past year.
- In comparison, the 2001 Rhode Island Health Interview Survey reported that 79.7% of Rhode Island children ages 1 18 saw a dentist in the past year.

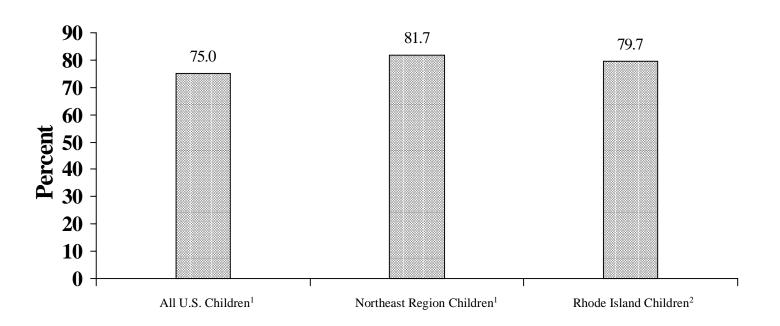
With respect to health insurance coverage, **Figure 4** shows:

- In 2003, 80.7% of U.S. children ages 2 17 with private health insurance coverage had a dental visit in the past year versus 72.6% of children with Medicaid or other public coverage and 50.5% of uninsured children.
- In 2001, 82.2% of RI children ages 1 18 with private health insurance coverage had a dental visit in the past year versus 68.3% of children with RIte Care/Medicaid coverage and 77.0% of uninsured children.

#### **Survey Question**

"About how long has it been since you/p last went to a dentist or dental assistant?"

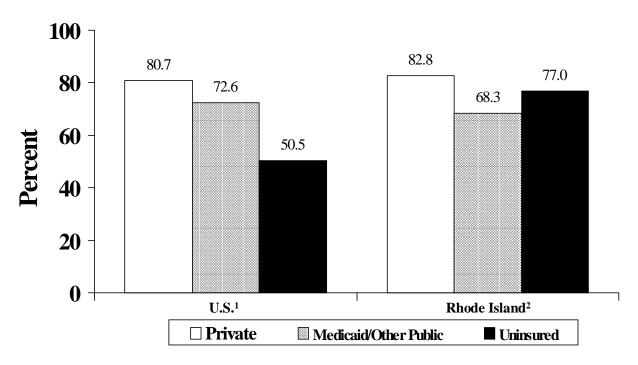
Figure 3: Percent of Children\* Who Had At Least One Dental Visit in The Past Year: By Geography



**Data Source**: <sup>1</sup>National Health Interview Survey, 2003, Ages 2-17; <sup>2</sup> RI Health Interview survey, 2001, Ages 1-18

<sup>\*</sup> As reported by their parents

Figure 4: Percent of Children\* Who Had At Least One Dental Visit in The Past Year: By Health Insurance Status



<sup>\*</sup> As reported by their parents

Data Source: <sup>1</sup>National Health Interview Survey, 2003, Ages 2-17; <sup>2</sup> RI Health Interview survey, 2001, Ages 1-18

# Information from the Rhode Island Health Interview Survey 1990, 1996 and 2001

#### **Dental Visits/Preventive Dental Visits**

In the 1990, 1996 and 2001 Rhode Island Health Interview Surveys, parents were asked how long it had been since their children last went to a dentist. For children ages 1-18, the percent who had seen a dentist in the past year increased from 76.0% in 1990, to 76.4% in 1996 and to 79.7% in 2001. As **Figure 5** shows:

- The percent of children ages 1-5 who had seen a dentist in the past year decreased from 45.6% in 1990, to 41.7% in 1996 but then increased to 52.7% in 2001.
- The percent of children ages 6-14 who had seen a dentist in the past year increased from 89.8% in 1990 to 93.2% in 1996 but then decreased to 91.5% in 2001.
- The percent of children ages 15-18 who had seen a dentist in the past year increased from 56.9% in 1990 to 90.3% in 1996 but then decreased to 87.2% in 2001.

#### As **Figure 6** shows:

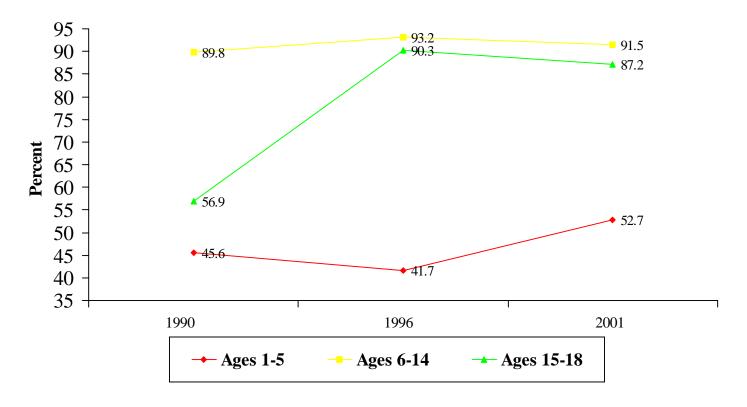
• Children ages 1-18 with private health insurance coverage were more likely to have seen a dentist in the past year (82.2% in 2001) than were either children on RIte Care/Medicaid (68.3% in 2001) or who were uninsured (77.0% in 2001).

For children who had seen a dentist in the past year, parents were asked if these dental visits were primarily for checkups or cleanings. Parents reported that the vast majority of these dental visits were primarily for checkups or cleanings. The percent who had seen the dentist primarily for a checkup or cleaning increased from 95.9% in 1990, to 96.0% in 1996 and to 96.1% in 2001.

### **Survey Questions**

- 1990 (Reported for children ages 1-18) "About how long has it been since you/p last went to a dentist or dental assistant?"
- 1996 (Reported for children ages 1-18) "About how long has it been since you/p last went to a dentist or dental hygienist?"
- 2001 (Reported for children ages 1-18) "About how long has it been since you/p last went to a dentist or dental hygienist?"
- 1990 (For those who have been to a dentist in the past 12 months) "Were any of the visits you/p made during the past 12 months primarily for a checkup or cleaning?"
- 1996 (For those who have been to a dentist in the past 12 months) "Were any of the visits you/p made during the past 12 months primarily for a checkup or cleaning?"
- 2001 (For those who have been to a dentist in the past 12 months) "Were any of the visits you/p made during the past 12 months primarily for a checkup or cleaning?"

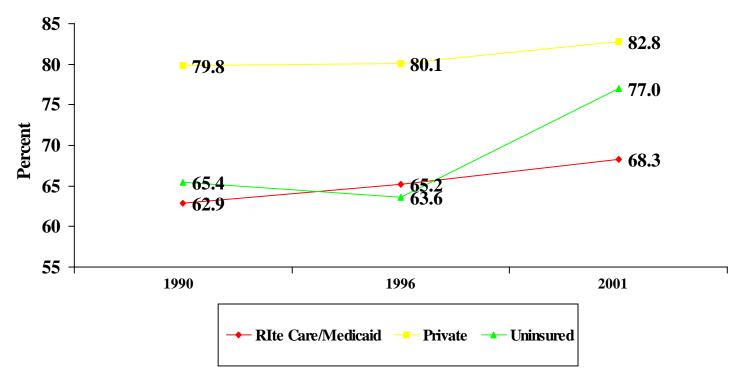
Figure 5: Percent of RI Children\* Who Had a Dental Visit in the Past Year: By Age



<sup>\*</sup> As reported by their parents

Data Source: RI Health Interview Survey - 1990, 1996, 2001 (Weighted Percents)

Figure 6: Percent of RI Children\* Who Had a Dental Visit in the Past Year: Ages 1-18 By Health Insurance Coverage



<sup>\*</sup> As reported by their parents

Data Source: RI Health Interview – 1990, 1996, 2001 (Weighted Percents)

# Information from the Rhode Island Health Interview Survey 2001

#### **Sealants**

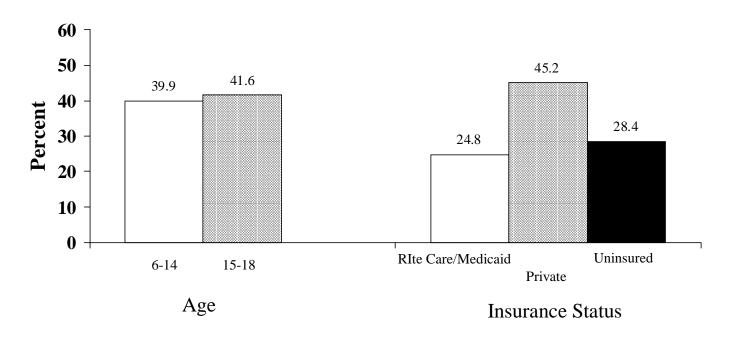
In 2001, parents of RI children ages 6-18 were asked if their children had ever received dental sealants. Overall, 40.4% of RI children ages 6-18 were reported to have received dental sealants. As **Figure 7** shows:

• Children with private health insurance coverage were more likely to have received dental sealants (45.2%) than were children on RIte Care/Medicaid (24.8%) or uninsured children (28.4%).

### **Survey Question**

(For those ages 6-18) "Dental Sealants are special plastic coatings painted on the tops of the back teeth to prevent tooth decay. They are different from fillings, caps, crowns, and fluoride treatments. Has <p> had sealants painted on his/her teeth"?

Figure 7: Percent of RI Children\* Who Have Ever Received Sealants by Age and Health Insurance Coverage: Children Ages 6-18



<sup>\*</sup> As reported by their parents

Data Source: RI Health Interview Survey - 2001 (Weighted Percents)

### Information from the Rhode Island Health Interview Survey 2001

#### **Barriers to Care**

In 2001, parents of RI children ages 1-18 were asked if they were not able to get dental care for their children in the past year because they couldn't afford it. They reported that 5.3% of RI children were not able to get dental care in the past year because of the expense. As **Figure 8** shows:

- Older children were more likely not to get dental care because of the expense than were younger children (7.0% of 15-18 year olds versus 5.3% of 6-14 year olds versus 4.0% of 1-5 year olds.
- Uninsured children ages 1-18 were more likely not to get dental care because of the expense than were children with private health insurance coverage and children on RIte Care/Medicaid (23.1% of uninsured children versus 4.6% of privately insured children and 4.7% of children on RIte Care/Medicaid).

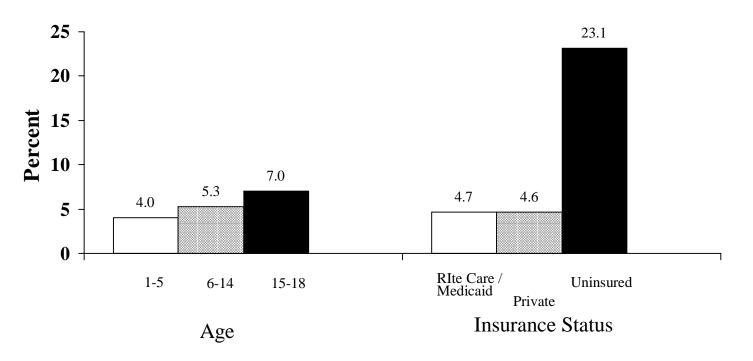
In 2001, parents of RI children ages 1-18 who were on RIte Care/Medicaid were asked if they delayed or didn't get dental care for their children because they couldn't find a dentist or didn't know a dentist who would accept their Medicaid coverage. They reported that 13.1% of RI children ages 1-18 who were on RIte Care/Medicaid delayed or didn't get dental care because they couldn't find a dentist who would accept their Medicaid coverage. As **Figure 9** shows:

• Older children on RIte Care/Medicaid were more likely to delay or not get dental care because they couldn't find a dentist who would accept their Medicaid coverage than were younger children (21.7% of children ages 15-18 versus 19.9% of children ages 6-14 versus 8.8% of children ages 1-5).

### **Survey Questions**

- 2001 (All children ages 1-18) "During the past 12 months was there any time anyone in the household needed Dental Care but didn't get it because they could not afford it?"
- 2001 (For those children ages 1-18 who were covered by Medicaid including RIte Care) "There are many reasons people delay or don't get dental care. Has p ever delayed or not gotten care because they could not find or did not know a dentist who accepts Medicaid?"

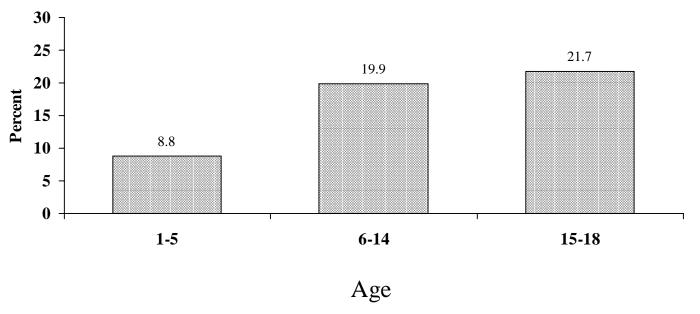
Figure 8: Percent of RI Children\* Who Did Not Get Dental Care in The Past Year Because of the Expense: Children Ages 1 - 18



<sup>\*</sup> As reported by their parents

 $\textbf{Data Source} \colon RI \; Health \; Interview \; Survey - 2001 (Weighted \; Percents)$ 

Figure 9: Percent of RI Children\* on RIte Care/Medicaid Who Delayed/Didn't Get Dental Care Because Dentist Wouldn't Accept Medicaid Coverage: RIte Care/Medicaid Enrollees Ages 1-18



<sup>\*</sup> As reported by their parents

**Data Source**: RI Health Interview Survey – 2001(Weighted Percents)

# Information from the Rhode Island Health Interview Survey 2001

#### **Fillings**

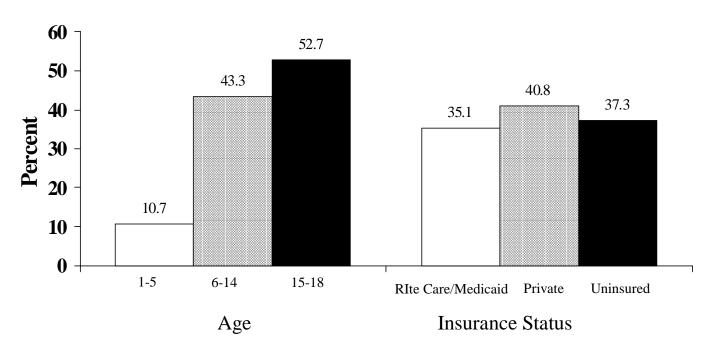
In 2001, parents of RI children ages 1-18 who have ever had a dental visit were asked if their children had one or more fillings. Nearly 40% of the children were reported to have had one or more fillings. As **Figure 10** shows:

- As children age, they are more likely to have one or more fillings; this is the case for 10.7% of children ages 1-5, 43.3% of children ages 6-14 and 52.7% of children ages 15-18.
- The percent of children ages 1-18 who have one or more fillings was similar for children with private health insurance coverage (40.8%), children on RIte Care/Medicaid (35.1%) and uninsured children (37.3%).

#### **Survey Question**

2001 (Children ages 1 - 18 who have ever been to a dentist) "Has p had one or more fillings?"

Graph 10: Of Those RI Children\* Who Have Ever Had a Dental Visit, Percent With One or More Fillings: Children Ages 1-18



<sup>\*</sup> As reported by their parents

**Data Source**: RI Health Interview Survey – 2001(Weighted Percents)

# Information from the Rhode Island Health Interview Survey 1996 and 2001

#### **Tooth Loss/Extractions**

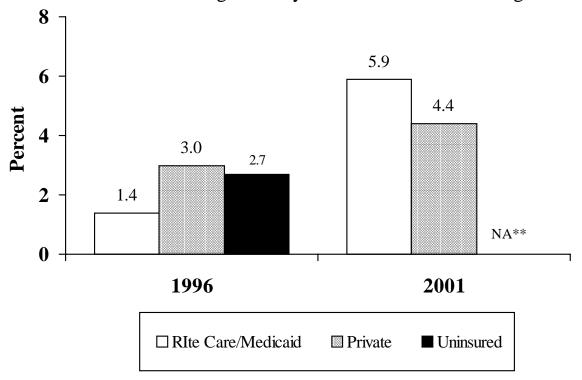
In 1996 and 2001, parents of RI children ages 1-5 were asked if their children had ever lost a tooth or had a tooth removed by a dentist for any reason except injury or natural tooth loss. In 1996, 2.8% of RI children ages 1-5 had lost a tooth or had a tooth removed for other than injury or natural tooth loss; in 2001 this percent increased to 4.8%.

Figure 11 compares 1996 and 2001 data by insurance coverage. Due to small numbers, it is difficult to interpret these data.

#### **Survey Questions**

- 1996 (Reported for ages 1-5) "Has p lost a tooth, or had a tooth removed by a dentist, for any reason except injury or natural tooth loss?"
- 2001 (For ages 1-5) "Has p lost a tooth, or had a tooth removed by a dentist, for any reason except injury or natural tooth loss?"

Figure 11: Percent of RI Children\* Who Have Ever Lost a Tooth Or Had One Removed: Not Due to Injury or Natural Tooth Loss Children Ages 1-5 by Health Insurance Coverage



Data Source: RI Health Interview Survey - 1996 and 2001(Weighted Percents)

### Information from the Medicaid Management Information System (MMIS) for Calendar Years 2002 and 2003

#### **Any Dental Visit**

In calendar year 2002 there were approximately 98,638 children ages 1 to 18 who were enrolled in RIte Care/Medicaid for some period of time and were eligible for dental benefits. Of these 98,638 children, 35,761 (or 36.3%) received at least one dental visit paid by Medicaid during the year. In calendar year 2003 there were approximately 96,951 children ages 1 to 18 who were enrolled in RIte Care/Medicaid for some period of time and were eligible for dental benefits. Of these 96,951 children, 37,055 (or 38.2%) received at least one dental visit paid by Medicaid during the year.

#### **Figure 12** shows that:

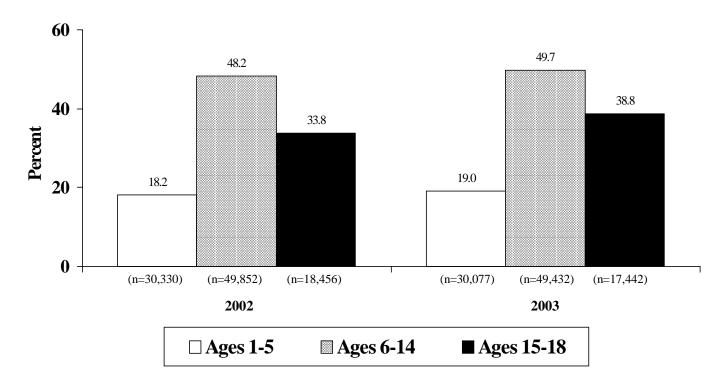
- Of the 30,330 children ages 1 to 5 who were enrolled in RIte Care/Medicaid for some period of time in calendar year 2002 and were eligible for dental benefits, 18.2% (or 5,522 of these children) received at least one dental visit paid by Medicaid during the year.
- Of the 49,852 children ages 6 to 14 who were enrolled in RIte Care/Medicaid for some period of time in calendar year 2002 and were eligible for dental benefits, 48.2% (or 24,009 of these children) received at least one dental visit paid by Medicaid during the year.
- Of the 18,456 children ages 15 to 18 who were enrolled in RIte Care/Medicaid for some period of time in calendar year 2002 and were eligible for dental benefits, 33.8% (or 6,230 of these children) received at least one dental visit paid by Medicaid during the year.
- Of the 30,077 children ages 1 to 5 who were enrolled in RIte Care/Medicaid for some period of time in calendar year 2003 and were eligible for dental benefits, 19.0% (or 5,704 of these children) received at least one dental visit paid by Medicaid during the year.

- Of the 49,432 children ages 6 to 14 who were enrolled in RIte Care/Medicaid for some period of time in calendar year 2003 and were eligible for dental benefits, 49.7% (or 24,576 of these children) received at least one dental visit paid by Medicaid during the year.
- Of the 17,442 children ages 15 to 18 who were enrolled in RIte Care/Medicaid for some period of time in calendar year 2003 and were eligible for dental benefits, 38.8% (or 6,775 of these children) received at least one dental visit during the year.

#### **MMIS Dental Procedure Codes**

Procedure Codes: HCPCS codes D0120 - D9999, excluding D5900-D5999 and D6200-D6999 (HEDIS Definition of Dental Visit). Plus local codes: X0314, X1110, X1204, X1351, X8998, X8999, X9220, X9221 and X9920.

Figure 12: Percent of RI Children on RIte Care/Medicaid Who Had At Least One Dental Visit Paid by Medicaid in the Year



Data Source: Medicaid Management Information System, Calendar Years 2002 and 2003

#### **Preventive and Restorative Dental Visits**

In calendar year 2002, 35,761 children ages 1 to 18 (or 36.3% of those eligible) received at least one dental visit paid by Medicaid during the year. In calendar year 2003, 37,055 children ages 1 to 18 (or 38.2% of those eligible) received at least one dental visit paid by Medicaid during the year.

Of those children who received at least one dental visit paid by Medicaid during the year, **Figures 13 and 14** present the percent of children who received at least one preventive dental visit and the percent of children who received at least one restorative dental visit. These are not mutually exclusive categories. A child could have received both a preventive and a restorative visit during the year.

Overall, in calendar year 2002, 90.5% (or 32,353) of those children who had at least one dental visit during the year had at least one preventive dental visit. In calendar year 2003, 90.9% (or 33,676) of those children who had at least one dental visit during the year had at least one preventive dental visit.

Of those children who received at least one dental visit paid by Medicaid during the year, **Figure 13** shows that:

- In calendar year 2002, 95.3% (or 5,261) of the children ages 1 to 5, 91.5% (or 21,963) of the children ages 6 to 14 and 82.3% (or 5,129) of the children ages 15 to 18 received at least one preventive dental visit.
- In calendar year 2003, 95.9% (or 5,471) of the children ages 1 to 5, 91.9% (or 22,593) of the children ages 6 to 14 and 82.8% (or 5,612) of the children ages 15 to 18 received at least one preventive dental visit.

Overall, in calendar year 2002, 31.2% (or 11,172) of those children who had at least one dental visit during the year had at least one restorative dental visit. In calendar year 2003, 30.8% (or 11,411) of those children who had at least one dental visit during the year had at least one restorative dental visit.

Of those children who received at least one dental visit paid by Medicaid during the year, **Figure 14** shows that:

- In calendar year 2002, 20.8% (or 1,147) of the children ages 1 to 5, 31.3% (or 7,523) of the children ages 6 to 14 and 40.2% (of 2,502) of the children ages 15 to 18 received at least one restorative dental visit.
- In calendar year 2003, 18.5% (or 1,054) of the children ages 1 to 5, 31.2% (of 7,659) of the children ages 6 to 14 and 39.8% (or 2,698) of the children ages 15 to 18 received at least one restorative dental visit.

#### **MMIS Dental Procedure Codes**

Preventive Dental Visit Procedure Codes: HCPCS codes D0120, D0150, D1000 – D1999 and local codes: X1204 and X1351.

Restorative Dental Visit Procedure Codes: HCPCS codes D2000 – D2999, D3000 – D3999, D6200 – D6999, D9920 and local code X9920.

Figure 13: Of Those RI Children on RIte Care/Medicaid Who Had At Least One Dental Visit Paid By Medicaid in the Year, Percent Who Had At Least One Preventive Dental Visit

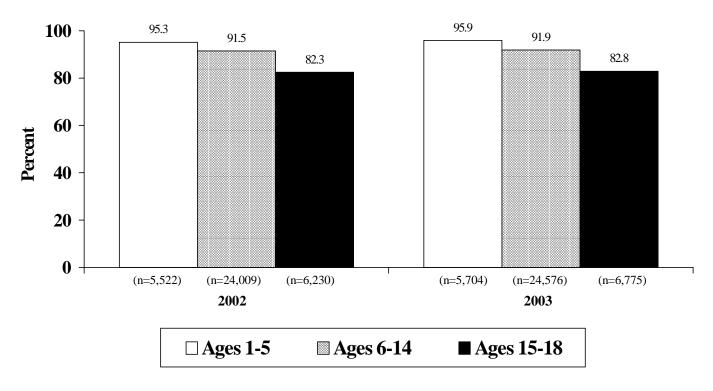
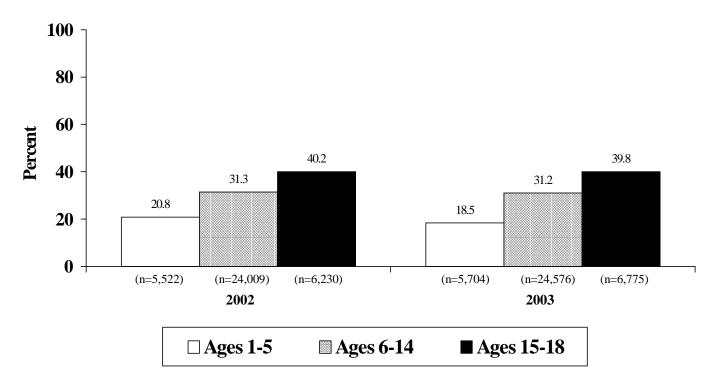


Figure 14: Of Those RI Children on RIte Care/Medicaid Who Had At Least One Dental Visit Paid By Medicaid in the Year, Percent Who Had At Least One Restorative Dental Visit



#### **Sealants**

In calendar year 2002, 3,739 (12.4% of) children ages 6 to 18 received at least one dental sealant. As **Figure 15** shows:

- Of those children ages 6 to 14 who received at least one dental visit in calendar year 2002, 13.8% (or 3,325) received at least one dental sealant.
- Of those children ages 15 to 18 who received at least one dental visit in calendar year 2002, 6.6% (or 414) received at least one dental sealant.

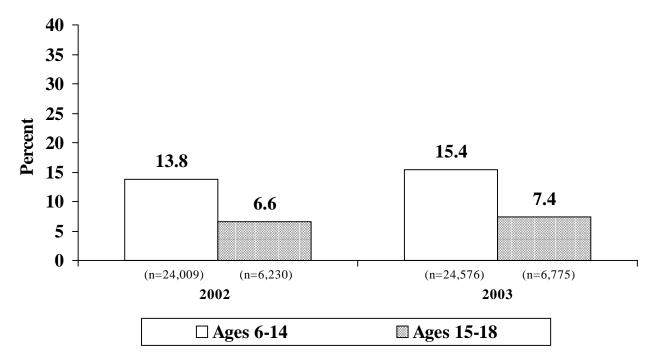
In calendar year 2003, 4,296 (13.7% of) children ages 6 to 18 received at least one dental sealant. As **Figure 15** shows:

- Of those children ages 6 to 14 who received at least one dental visit in calendar year 2003, 15.47% (or 3,793) received at least one dental sealant.
- Of those children ages 15 to 18 who received at least one dental visit in calendar year 2003, 7.4% (or 503) received at least one dental sealant.

## **MMIS Dental Procedure Codes**

Dental Sealants Procedure Codes: HCPCS code D1351 and local code X1351.

Figure 15: Of Those RI Children on RIte Care/Medicaid Who Had At Least One Dental Visit Paid By Medicaid in the Year, Percent Who Received At Least One Dental Sealant



## **Fillings**

Overall in calendar year 2002, 28.9% (or 10,238) of those children who had at least one dental visit during the year had at least one dental filling. In calendar year 2003, 24.9% (or 9,212) of those children who had at least one dental visit during the year had at least one dental fillings.

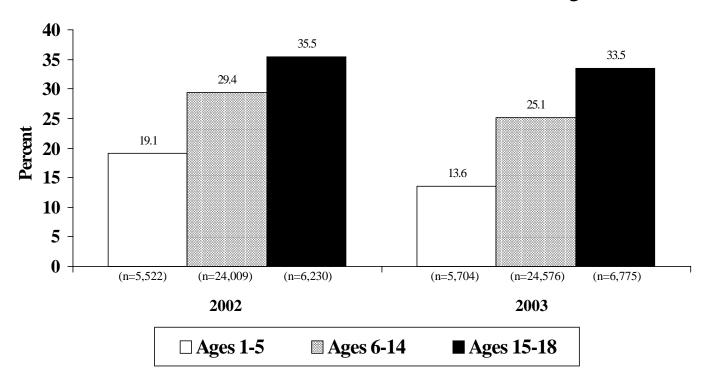
Of those children who received at least one dental visit paid by Medicaid during the year, **Figure 16** shows that:

- In calendar year 2002, 19.1% (or 1,057) of the children ages 1 to 5, 29.4% (or 7,057) of the children ages 6-14 and 35.5% (or 2,214) of the children ages 15 to 18 had received at least one dental filling.
- In calendar year 2003, 13.6% (or 773) of the children ages 1 to 5, 25.1% (or 6,172) of the children ages 6-14 and 33.5% (or 2,267) of the children ages 15 to 18 had received at least one dental filling.

### **MMIS Dental Procedure Codes**

Dental Fillings: HCPCS codes D2110-D2210, D2330-D2388, D2410-D2430, D2510 – D2664.

Figure 16: Of Those RI Children on RIte Care/Medicaid Who Had At Least One Dental Visit Paid By Medicaid in the Year, Percent Who Received at Least One Filling



#### **Extractions**

Overall in calendar year 2002, 13.1% (or 4,669) of those children who had at least one dental visit during the year had at least one tooth extracted. In calendar year 2003, 6.0% (or 2,206) of those children who had at least one dental visit during the year had at least one tooth extracted. Of those children who received at least one dental visit paid by Medicaid during the year, **Figure 17** shows that:

- In calendar year 2002, 7.7% (or 423) of the children ages 1 to 5, 14.3% (or 3,444) of the children ages 6-14 and 12.9% (or 802) of the children ages 15 to 18 had at least one tooth extracted.
  - Of those children who had at least one dental visit during the year, 10.3% (or 3,676) had at least one tooth extraction which was likely due to decay; of those children who had at least one dental visit during the year, 3.4% (or 1,224) had at least one tooth extraction which was possibly in preparation for braces. (In 2002, a child could have had both an extraction due to decay and an extraction in preparation for braces.)
- In calendar year 2003, 2.1% (or 118) of the children ages 1 to 5, 5.9% (or 1,452) of the children ages 6-14 and 9.4% (or 636) of the children ages 15 to 18 had at least one tooth extracted.
  - Of those children who had at least one dental visit during the year, 3.3% (or 1,210) had at least one tooth extraction which was likely due to decay; of those children who had at least one dental visit during the year, 2.8% (or 1,043) had at least one tooth extraction which was possibly in preparation for braces. (In 2003, a child could have had both an extraction due to decay and an extraction in preparation for braces.)

#### **MMIS Dental Procedure Codes**

Extractions: Extractions Likely Due to Decay: HCPCS codes D7110-D7130, and

Surgical Extractions Possibly in Preparation for Braces: HCPCS codes D7210-D7250.

Figure 17: Of those RI Children on RIte Care/Medicaid Who Had At Least One Dental Visit Paid By Medicaid in the Year,
Percent Who Had at Least One Tooth Extracted

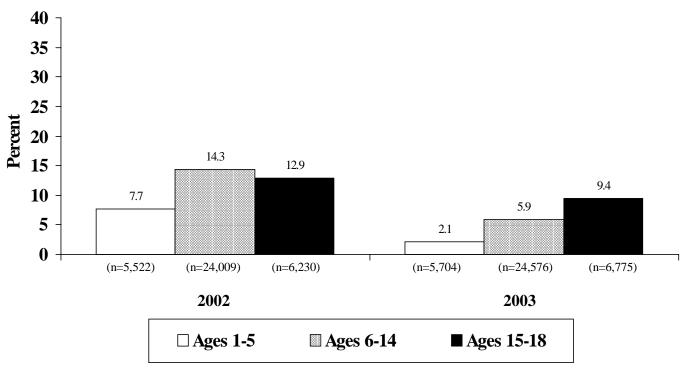


TABLE 1: RI Children on RIte Care/Medicaid: Types of Dental Visits Paid by Medicaid by City and Town -- Calendar Year 2002

	Children With At Least One Dental Visit	For Chile Had		ho Hac ast One		st one I	Dental V	Visit in t	he Year	:, Those	that
City/Town		Preven Visi		Restor Vis		Seala	ant	Filli	ng	Extrac	ction
	#	#	%	#	%	#	%	#	%	#	%
Total	35,761	32,353	90.5	11,172	31.2	3,739	10.5	10,328	28.9	4,669	13.1
Barrington	94	87	92.6	26	27.7	10	10.6	22	23.4	18	19.1
Bristol	280	257	91.8	97	34.6	30	10.7	94	33.6	33	11.8
Burrillville	344	302	87.8	104	30.2	24	7.0	98	28.5	33	9.6
Central Falls	1,390	1,171	84.2	443	31.9	84	6.0	400	28.8	203	14.6
Charlestown	145	130	89.7	44	30.3	16	11.0	41	28.3	17	11.7
Coventry	608	549	90.3	173	28.5	36	5.9	164	27.0	89	14.6
Cranston	1,960	1,763	89.9	598	30.5	209	10.7	564	28.8	280	14.3
Cumberland	387	348	89.9	130	33.6	30	7.8	118	30.5	38	9.8
East Greenwich	131	121	92.4	44	33.6	9	6.9	39	29.8	15	11.5
East Providence	1,062	955	89.9	310	29.2	119	11.2	290	27.3	143	13.5

Exeter	104	95	91.3	34	32.7	9	8.7	32	30.8	15	14.4
Foster	68	62	91.2	18	26.5	6	8.8	16	23.5	11	16.2
Gloucester	159	142	89.3	52	32.7	16	10.1	50	31.4	19	11.9
Hopkinton	166	146	88.0	64	38.6	16	9.6	62	37.3	27	16.3
Jamestown	47	42	89.4	11	23.4	7	14.9	11	23.4	2	4.3
Johnston	684	608	88.9	210	30.7	84	12.3	200	29.2	102	14.9
Lincoln	276	250	90.6	95	34.4	20	7.2	90	32.6	26	9.4
Little Compton	33	32	97.0	14	42.4	6	18.2	14	42.4	6	18.2
Middletown	305	283	92.8	92	30.2	29	9.5	89	29.2	45	14.8
Narragansett	188	167	88.8	72	38.3	9	4.8	70	37.2	20	10.6
Newport	790	724	91.6	239	30.3	57	7.2	227	28.7	99	12.5
New Shoreham	2	2	100.0	1	50.0	0	0.0	1	50.0	0	0.0
North Kingstown	440	390	88.6	130	29.5	43	9.8	125	28.4	58	13.2
North Providence	603	547	90.7	184	30.5	69	11.4	174	28.9	72	11.9
North Smithfield	125	118	94.4	37	29.6	10	8.0	33	26.4	14	11.2
Pawtucket	3,276	2,892	88.3	894	27.3	229	7.0	828	25.3	413	12.6
Portsmouth	214	191	89.3	73	34.1	21	9.8	73	34.1	28	13.1
Providence	13,060	12,033	92.1	4,093	31.3	1,702	13.0	3,717	28.5	1,753	13.4
Richmond	104	87	83.7	38	36.5	10	9.6	36	34.6	12	11.5
Scituate	144	127	88.2	44	30.6	18	12.5	42	29.2	17	11.8
Smithfield	154	136	88.3	49	31.8	13	8.4	46	29.9	20	13.0
South Kingstown	361	311	86.1	127	35.2	20	5.5	124	34.3	41	11.4
Tiverton	222	214	96.4	83	37.4	29	13.1	81	36.5	26	11.7
Warren	224	208	92.9	65	29.0	28	12.5	62	27.7	22	9.8
Warwick	1,754	1,599	91.2	546	31.1	219	12.5	507	28.9	225	12.8
Westerly	515	458	88.9	210	40.8	50	9.7	198	38.4	54	10.5
West Greenwich	87	71	81.6	26	29.9	6	6.9	25	28.7	12	13.8
West Warwick	814	750	92.1	264	32.4	54	6.6	243	29.9	128	15.7
Woonsocket	2,206	1,975	89.5	759	34.4	197	8.9	719	32.6	243	11.0
Other	2,235	2,010	89.9	679	30.4	195	8.7	603	27.0	290	13.0

TABLE 2: RI Children on RIte Care/Medicaid: Types of Dental Visits Paid by Medicaid by City and Town -- Calendar Year 2003

	Children With At Least One Dental Visit	For Chile Had		ho Hac ast One		st one I	Dental V	<sup>7</sup> isit in t	he Yeai	;, Those	that
City/Town		Preven Visi		Restor Vis		Seala	ant	Filli	ng	Extra	ction
	#	#	%	#	%	#	%	#	%	#	%
Total	37,055	33,676	90.9	11,411	30.8	4,296	11.6	9,212	24.9	2,206	6.0
Barrington	99	89	89.9	26	26.3	18	18.2	21	21.2	4	4.0
Bristol	284	267	94.0	90	31.7	40	14.1	73	25.7	19	6.7
Burrillville	378	326	86.2	120	31.7	25	6.6	116	30.7	23	6.1
Central Falls	1,482	1,293	87.2	474	32.0	121	8.2	396	26.7	84	5.7
Charlestown	143	121	84.6	51	35.7	16	11.2	46	32.2	11	7.7
Coventry	692	632	91.3	191	27.6	49	7.1	165	23.8	40	5.8
Cranston	1,985	1,784	89.9	604	30.4	189	9.5	506	25.5	130	6.5
Cumberland	424	382	90.1	143	33.7	48	11.3	123	29.0	23	5.4
East Greenwich	130	121	93.1	38	29.2	14	10.8	36	27.7	9	6.9

E. J. D L	4.054	057	04.4	205	20.0	440	40.0	240	22.4	CO	C F
East Providence	1,051	957	91.1 85.4	325	30.9	113	10.8	246	23.4	68	6.5
Exeter	96	82		37	38.5	5	5.2	35	36.5	7	7.3
Foster	68	57	83.8	20	29.4	10	14.7	16	23.5	6	8.8
Gloucester	164	139	84.8	52	31.7	14	8.5	47	28.7	8	4.9
Hopkinton	184	157	85.3	60	32.6	14	7.6	55	29.9	14	7.6
Jamestown	55	49	89.1	12	21.8	2	3.6	10	18.2	3	5.5
Johnston	652	598	91.7	233	35.7	73	11.2	191	29.3	30	4.6
Lincoln	323	292	90.4	108	33.4	27	8.4	101	31.3	28	8.7
Little Compton	28	27	96.4	15	53.6	3	10.7	11	39.3	2	7.1
Middletown	311	275	88.4	83	26.7	22	7.1	63	20.3	9	2.9
Narragansett	203	178	87.7	67	33.0	16	7.9	62	30.5	14	6.9
Newport	768	708	92.2	167	21.7	66	8.6	127	16.5	31	4.0
New Shoreham	1	0	0.0	1	100.0	0	0.0	1	100.0	0	0.0
North Kingstown	429	381	88.8	122	28.4	33	7.7	105	24.5	25	5.8
North Providence	630	571	90.6	219	34.8	85	13.5	178	28.3	38	6.0
North Smithfield	140	129	92.1	43	30.7	19	13.6	38	27.1	3	2.1
Pawtucket	3,480	3,113	89.5	1,007	28.9	400	11.5	845	24.3	208	6.0
Portsmouth	203	186	91.6	50	24.6	19	9.4	37	18.2	9	4.4
Providence	13,763	12,694	92.2	4,322	31.4	1,970	14.3	3,180	23.1	876	6.4
Richmond	108	97	89.8	41	38.0	8	7.4	41	38.0	8	7.4
Scituate	165	152	92.1	45	27.3	13	7.9	40	24.2	4	2.4
Smithfield	172	153	89.0	46	26.7	22	12.8	44	25.6	7	4.1
South Kingstown	423	371	87.7	123	29.1	25	5.9	112	26.5	30	7.1
Tiverton	239	227	95.0	73	30.5	33	13.8	53	22.2	9	3.8
Warren	199	180	90.5	49	24.6	21	10.6	41	20.6	9	4.5
Warwick	1,783	1,609	90.2	527	29.6	169	9.5	447	25.1	80	4.5
Westerly	565	521	92.2	196	34.7	50	8.8	184	32.6	42	7.4
West Greenwich	78	74	94.9	21	26.9	3	3.8	18	23.1	5	6.4
West Warwick	920	828	90.0	252	27.4	91	9.9	219	23.8	65	7.1
Woonsocket	2,395	2,205	92.1	825	34.4	260	10.9	748	31.2	115	4.8
Other	1,842	1,651	89.6	533	28.9	190	10.3	435	23.6	110	6.0
0.1101	,	,									

### **Total and Avoidable Dental Emergency Department Visits and Hospitalizations**

#### **ED Visits**

## Fee-for-Service Medicaid Members Under Age 19

- In calendar year 2001, there were a total of 20 ED visits with a principal diagnosis of dental problems or conditions; 17 of these dental ED visits were for avoidable dental diagnoses.
- In calendar year 2002, there were a total of 26 ED visits with a principal diagnosis of dental problems or conditions; 25 of these dental ED visits were for avoidable dental diagnoses.

## RIte Care Members Under Age 19

- In calendar year 2001, there were a total of 167 ED visits with a principal diagnosis of dental problems or conditions; 47 of these dental ED visits were for avoidable dental diagnoses.
- In calendar year 2002, there were a total of 222 ED visits with a principal diagnosis of dental problems or conditions; 63 of these dental ED visits were for avoidable dental diagnoses.

## Hospitalizations

### Fee-for-Service Medicaid Members Under Age 19

• In calendar year 2001, there was 1 hospitalizations with a principal diagnosis of dental problems or conditions. This was not an avoidable hospitalizations.

• In calendar year 2002, there were 3 hospitalization with a principal diagnosis of dental problems or conditions; 1 was for an avoidable dental diagnoses.

### RIte Care Members Under Age 19

- In calendar year 2001, there were 11 hospitalizations with a principal diagnosis of dental problems or conditions; 3 were for avoidable dental diagnoses.
- In calendar year 2002, there were 8 hospitalizations with a principal diagnosis of dental problems or conditions; 1 was for an avoidable dental diagnoses.

## ICD-9 Dental Diagnoses Codes (Avoidable Conditions listed in Bold Type)

- 520 Disorders of Tooth Development and Eruption
- 521 Diseases of Hard Tissues of Teeth
- 522 Diseases of Pulp and Periapical Tissues
- 523 Gingival and Periodontal Diseases
- 524 Dentofacial Anomalies, including Malocclusion
- 525 Other Diseases and Conditions of the Teeth and Supporting Structures
- 526 Disease of the Jaws
- 527 Diseases of the Salivary Glands
- 528 Diseases of the Oral Soft Tissues, excluding lesions specific for Gingiva and Tongue
- 529 Diseases and Other Conditions of the Tongue

# Information from the RI Hospital Discharge Data Set Aggregate of the Years 1993 through 2002

## Hospitalizations with a Principal Diagnosis of Avoidable Dental Problem/Condition

## For All Rhode Island Children Ages 18 and Under

From 1993 to 2002, there were a total of 219,634 hospitalizations for ambulatory care sensitive (ACS) conditions. ACS conditions are conditions for which timely and effective primary care will reduce the risk of hospitalization by: (1) preventing the start of the illness (an avoidable condition), (2) controlling an acute episodic illness or condition (an acute condition), and (3) managing a chronic disease or condition (a chronic condition). All ACS hospitalizations with dental diagnoses are judged avoidable.

- From 1993 to 2002, there were a total of 429 avoidable dental hospitalizations: 87 were among children ages 1-5; 86 among children ages 6-14 and 256 among children ages 15-18.
- Over 85% (366) of these hospitalizations occurred at either Miriam Hospital or Rhode Island Hospital:

Miriam Hospital had 41% (179) of these avoidable dental hospitalizations, and Rhode Island Hospital had 44% (187) of these avoidable dental hospitalizations.

- Nearly 74% (316) of these hospitalizations were physician referrals; over 23% (100) originated in the ER.
- About 44% (188) of these hospitalizations were for males and 56% (241) were for females.

# **ICD-9 Avoidable Dental Diagnoses**

- 521 Diseases of Hard Tissues of Teeth
- 522 Diseases of Pulp and Periapical Tissues
- 523 Gingival and Periodontal Diseases
- 525 Other Diseases and Conditions of the Teeth and Supporting Structures
- 528 Diseases of the Oral Soft Tissues, excluding lesions specific for Gingiva and Tongue

# APPENDIX A: Denominators for RI Heath Interview Survey

# Denominators: Characteristics of the Rhode Island Health Interview Survey Respondents: 1990, 1996 and 2001 / Unweighted Counts

	1990	1996	2001
AGE			
Age 1-18	1,654	1,941	1,883
Age 1 – 5	511	585	502
Age 6 – 14	808	999	1,016
Age 15 – 18	335	357	365
INSURANCE STATUS			
Medicaid/RIte Care	232	402	429
Private	1,204	1,275	1,307
Uninsured	141	197	78

Note: If there are less than 50 persons responding to a survey question, survey results are not reported.

# APPENDIX B: Denominators for MMIS Data

Denominators: RIte Care/Medicaid Children Who Were Eligible for Dental Benefits and Those Who Had At Least One Dental Visit in Calendar Years 2002 and 2003

	20	02	2003				
	Eligible for	At Least One	Eligible for	<b>At Least One</b>			
	<b>Dental Benefits</b>	<b>Dental Visit</b>	<b>Dental Benefits</b>	<b>Dental Visit</b>			
Age 1 – 18	98,638	35,761	96,951	37,055			
Age 1 – 5	30,330	5,522	30,077	5,704			
Age 6 – 14	49,852	24,009	49,432	24,576			
Age 15 – 18	18,456	6,230	17,442	6,775			
			_				

Medicaid Children are eligible for dental services unless they are in one of the following populations:

- Drug Court (MMIS AID Category DG)
- GPA (AID Category G1)
- Special MHRH populations (AID Categories DD, D1 and D2)
- EI only (AID Category EI)
- >250% FPL pregnant/postpartum women (AID Categories 54, 64, 84, 94)
- EFP only (AID Categories 01, 03, 04, 71, 73 and 74)